

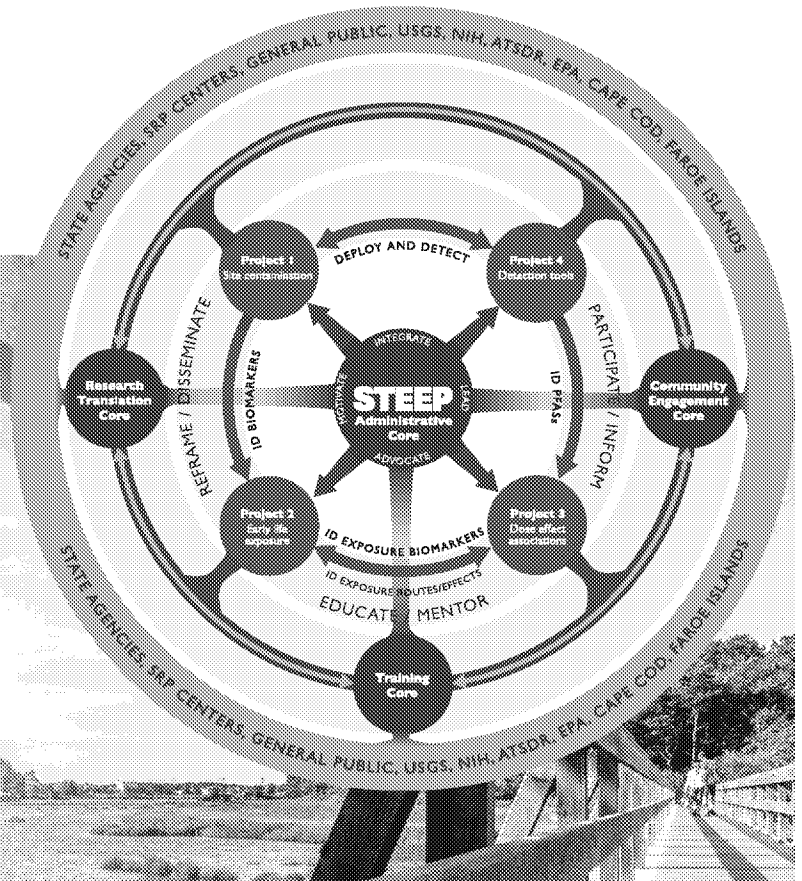
STEEP

Sources, Transport, Exposure & Effects of PFASs
UNIVERSITY OF RHODE ISLAND SUPERFUND RESEARCH PROGRAM

STEEP's goal is to address the human and environmental health threats of PFASs (Per- and Polyfluoroalkyl Substances) to reduce exposure and mitigate future contamination.

PFASs Overview

- ▷ PFASs have emerged as high-priority environmental contaminants at increasing numbers of sites, including drinking water sources.
- ▷ Produced and used in consumer products for more than 60 years, ubiquity in human blood and environment discovered less than 20 years ago.
- ▷ **Primary sources of contamination are:**
 - Aqueous film-forming foam.
 - Manufacturing sites of PFAS-containing products.
 - PFAS production industrial sites.
- ▷ More than 600 PFAS-contaminated sites in U.S.; many likely to become official superfund sites.
- ▷ Major challenges remain for effective protection from PFAS exposure through regulation and remediation.



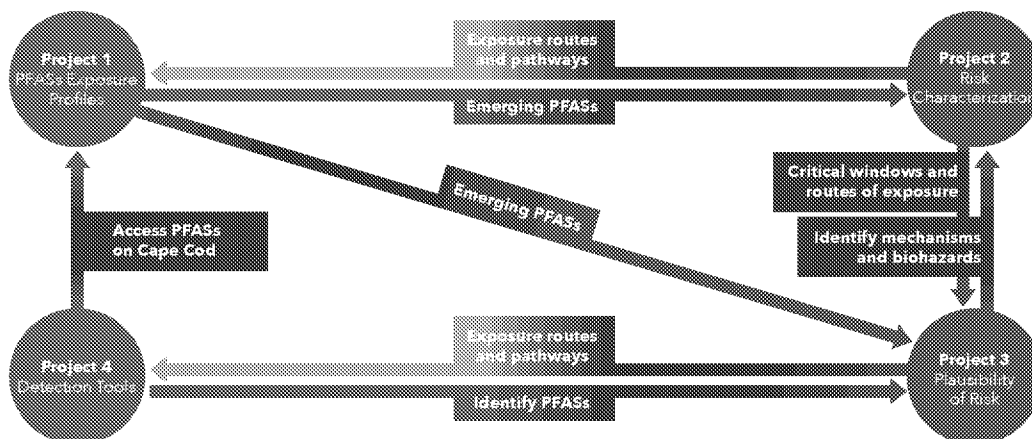
Research Projects

Environmental Engineering (1)

Trace unique PFASs chemical signature—fingerprint—to establish PFASs exposure levels at a contaminated groundwater site on Cape Cod through drinking water and fish as a function of PFAS chemistry, geochemistry and distance from source.

Epidemiological Study (2)

Link prenatal, lactational, and postnatal PFAS exposure data to clinical indicators of immune dysfunction and metabolic abnormalities as indicators of sensitive effects during early development; volunteer cohort located in Faroe Islands.



Environmental Engineering (4)

Develop and validate novel passive sampling tools for PFASs to measure time weighted average concentrations for both ionic PFASs and their volatile precursors; deploy to aid site managers in their risk characterization.

Laboratory Model (3)

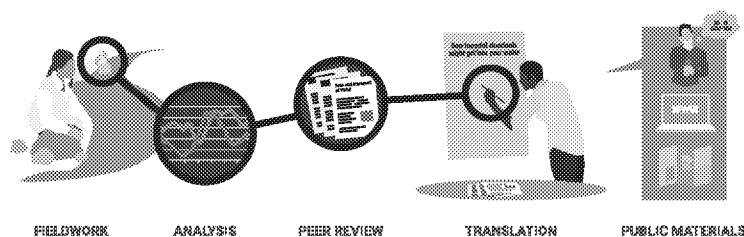
Establish pathways of PFAS effects on metabolic and inflammatory abnormalities to better assess PFASs role contributing to obesity and weakening immune system, prime human health epidemics.

Research Translation Core (RTC)

- ▷ Ensure consistency of tone, content, style, language, and branding to create recognizable and cohesive messaging across projects and cores.
- ▷ Develop and implement communication enhancement opportunities for trainees and researchers to encourage greater capacity for messaging.
- ▷ Tailor information to specific audiences along a continuum of familiarity with PFAS guided by the Transtheoretical Model of behavior change.

Ensure communication is culturally informed when providing:

- Site-specific information to Cape Cod as facilitated by Community Engagement Core; to Faroe Islands as facilitated by Research Project 2.
- Broad spectrum communication efforts to address the impacts of emerging PFAS contaminants across the country.

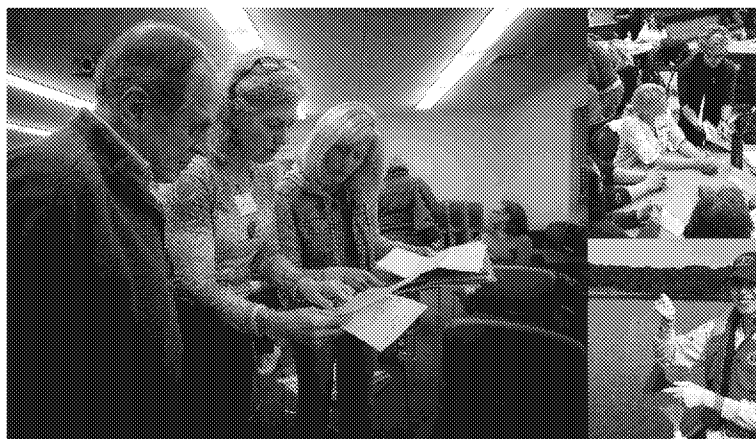


Enhance "stickiness" of message through modes of learning:

- Emotional learning (e.g., visual, aural, and style of delivery)
- Traditional forms of learning (e.g., text and descriptions).

Training Core (TC)

- ▷ Promote and coordinate interdisciplinary and inter-institutional cross-training experiences.
- ▷ Provide professional development opportunities to enhance leadership, peer-to-peer mentoring, outreach, and communication skills.
- ▷ Collaborate with RTC/CEC to provide skills often not addressed in traditional PhD programs.
- ▷ Connect trainees through social media to create cohesive and integrated team.
- ▷ Support intra-STEEP lab exchanges and participation in professional conferences.



Community Engagement Core (CEC)

Cape Cod, Massachusetts

- ▷ Foster bidirectional communication and engagement between Cape Cod and STEEP through partnerships with local community-based organizations.
- ▷ Convene, engage, collaborate with STEEP's Cape Cod Advisory Committee.
- ▷ Develop informational materials with RTC to meet community needs.
- ▷ Offer private well testing to improve understanding of PFAS exposure.
- ▷ Support and engage in Cape-based Research Projects 1 and 4.
- ▷ Provide community engagement best practices to STEEP trainees.

Faroe Islands, Denmark

- ▷ Revive and extend existing Faroese research team collaborations.
- ▷ Support Research Project 2 lead and Faroe Islands colleagues as requested.
- ▷ Work with RTC to develop culturally appropriate information.

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More information about STEEP is available at: <https://web.uri.edu/stEEP/> and https://tools.niehs.nih.gov/kcp/programs/Program_detail.htm?Project_ID=P42ES027706